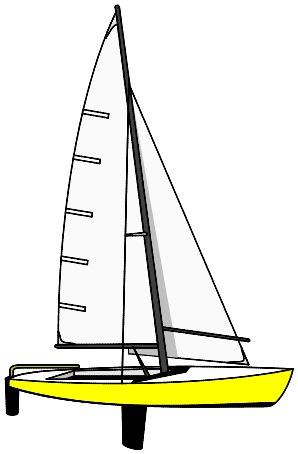
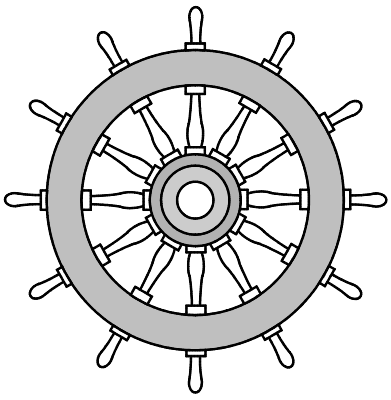
National Weather Service
Los Angeles/Oxnard

http://www.weather.gov/losangeles





Marine Weather User's Guide

February 2006

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MARINE SERVICES AND WARNING PROGRAM

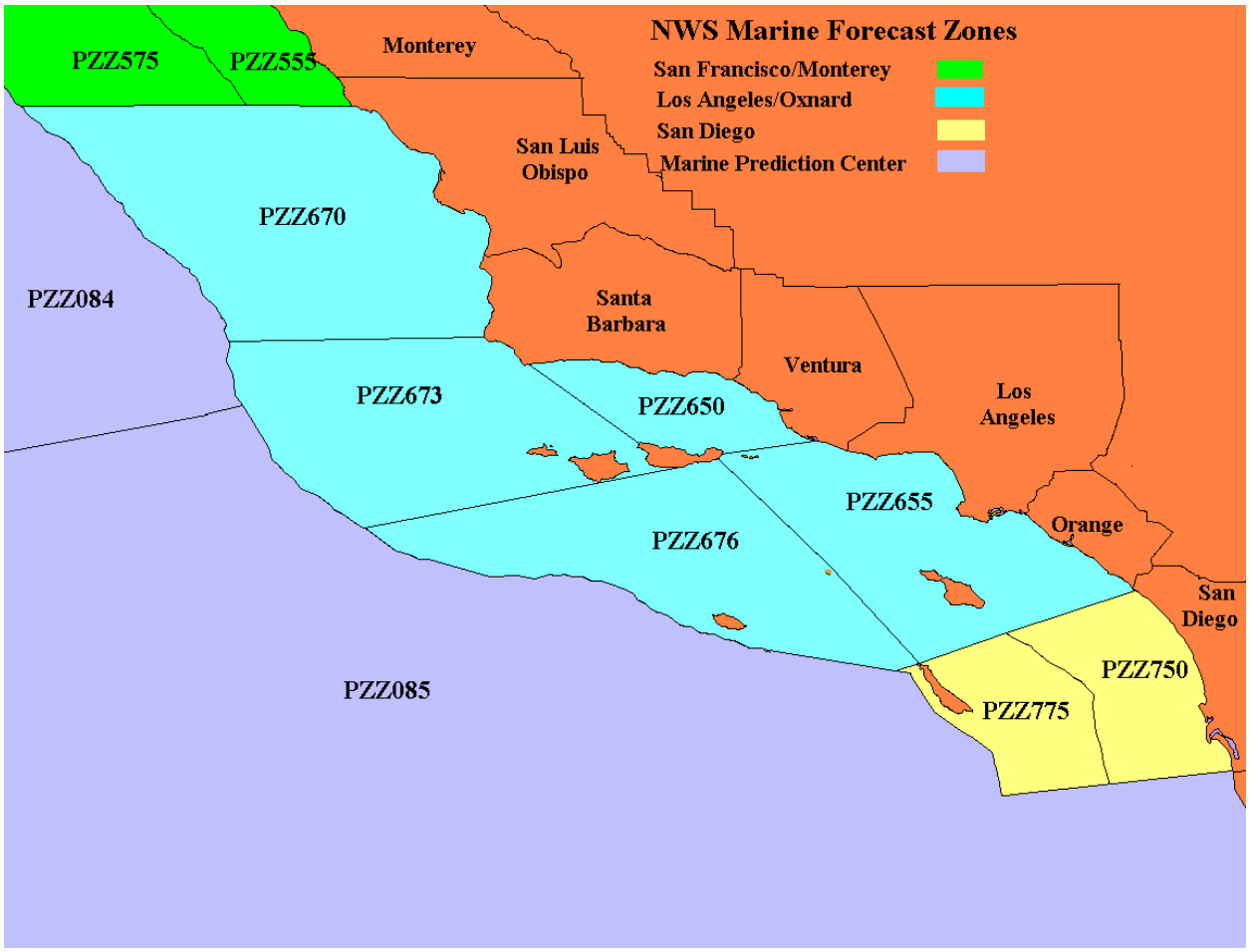
The objective of the Marine Services and Warning Program is to improve efficiency and safety for commercial, governmental, and recreational maritime operations on the high seas and along the coasts of the United States. The National Weather Service has statutory responsibility for the forecasting of weather, the issuing of storm warnings, and the collection and transmission of marine information for the benefit of commerce and navigation.

The National Weather Service (NWS) Forecast Office in Oxnard is responsible for the issuance of all marine forecasts and warnings for the Central and Southern California coastal waters out to 60 nautical miles offshore from Point Piedras Blancas south to San Mateo Point, including Santa Cruz, San Miguel, Santa Rosa, San Nicolas, Anacapa, Santa Barbara and Catalina Islands.

The San Diego NWS office issues the forecasts and warnings for the coastal waters from San Mateo Pt. to the Mexican Border including San Clemente Island.

The Monterey NWS office issues the forecasts and warnings for the coastal waters out to 60 nautical miles from Point Arena to Point Piedras Blancas, including the San Francisco Bay area and Monterey Bay.

The NWS Ocean Prediction Center, located in Camp Springs MD, issues the marine forecasts for the waters from 60 to 250 nautical miles offshore along the entire West Coast.



DESCRIPTIONS OF NWS MARINE FORECAST ZONES

Marine Forecasts issued by NWS San Francisco/Monterey (partial listing):

PZZ555	Pigeon Point to Point Piedras Blancas out to 20 nm
PZZ575	Pigeon Point to Point Piedras Blancas 20 to 60 nm offshore

Marine Forecasts issued by NWS Los Angeles/Oxnard:

PZZ670	Point Piedras Blancas to Point Arguello out to 60 nm
PZZ673	Point Arguello to Santa Cruz Island out to 60 nm includes San Miguel and Santa Rosa Islands
PZZ676	Outer Waters from Santa Cruz Island to San Clemente Island includes San Nicolas Island
PZZ650	East Santa Barbara Channel from Point Conception to Point Mugu includes Santa Cruz and Anacapa Islands
PZZ655	Inner Waters from Point Mugu to San Mateo Point includes Santa Catalina and Santa Barbara Islands

Marine Forecasts issued by NWS San Diego:

PZZ750	Coastal Waters from San Mateo Point to the Mexican Border out to 30 nm
PZZ775	Waters from San Mateo Point to the Mexican Border extending 30 to 60 nm out including San Clemente Island

Marine Forecasts issued by Ocean Prediction Center, NWS Washington DC:

PZZ084	Point Arena to Point Conception 60 to 250 nm offshore
PZZ085	Point Conception to Guadalupe Island 60 to 250 nm offshore

ADVISORIES AND WARNINGS "HEADLINED" IN MARINE FORECASTS

Since the greatest weather threat to mariners is either directly or indirectly wind-related, there are five products used in the Marine Warning Program to define the warning threshold for increasing wind speeds. These advisories or warnings are "headlined" when criteria for issuance are met or forecast. Small Craft Advisories can be issued up to 24 hours and warnings up to 36 hours prior to onset of adverse conditions.

SMALL CRAFT ADVISORY	Forecast winds of 21 to 33 knots - Small Craft Advisories may also be issued for hazardous sea conditions (10 feet or greater).
GALE WARNING	Forecast winds of 34 to 47 knots.
STORM WARNING	Forecast winds of 48 to 63 knots.
TROPICAL STORM WARNING	Forecast winds of 34 to 63 knots associated with a tropical storm.
HURRICANE WARNING	Forecast winds of 64 knots or higher associated with a hurricane.
HURRICANE FORCE WIND WARNING	Forecast winds of 64 knots or higher NOT associated with a hurricane.

EXAMPLE HEADLINE WITHIN A PRODUCT

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COASTAL WATERS FORECAST
NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD CA
230 AM PST WED FEB 22 2006

PZZ670-211630-
/O.NEW.KLOX.SC.Y.0010.060222T1100Z-060222T1700Z/
WATERS FROM PT. PIEDRAS BLANCAS TO PT. ARGUELLO AND WESTWARD 60 NM-
230 AM PST WED FEB 22 2006

...SMALL CRAFT ADVISORY FOR HAZARDOUS SEAS UNTIL 2 PM PST...

.TODAY...WIND SE TO S 10 TO 20 KT...SHIFTING TO W 10 TO 15 KT LATE IN THE
AFTERNOON. WIND WAVES 2 TO 3 FEET. SWELL NW 11 FEET...SUBSIDING TO 9 FEET IN
THE AFTERNOON. A CHANCE OF RAIN.
.TONIGHT...WIND NW 10 TO 15 KT. WIND WAVES 2 FEET. SWELL NW 8 FEET.
.THU...WIND W TO NW 10 TO 15 KT...BECOMING NW 15 TO 20 KT IN THE AFTERNOON.
WIND WAVES 2 FEET...BUILDING TO 3 FEET. SWELL NW 8 FEET...BUILDING TO 10 FEET
DURING THE AFTERNOON. A CHANCE OF RAIN.
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MARINE PRODUCTS

COASTAL WATERS FORECAST

The Coastal Waters Forecast is a routine product issued four times daily at 3:00 am, 9:00 am, 3:00 pm and 9:00 pm year round. It is the general forecast for the coastal waters out to 60 nautical miles offshore. The Coastal Waters Forecast includes information about wind, wave, swell, and significant weather (including fog, rain or showers, and thunderstorms). Any advisories or warnings, such as a Small Craft Advisory or a Gale Warning, will be "headlined" within this product.

EXAMPLE COASTAL WATERS FORECAST (CWF, FZUS56)

COASTAL WATERS FORECAST
NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD CA
300 PM PST FRI DEC 9 2005

PZZ600-100515-
300 PM PST FRI DEC 9 2005

.SYNOPSIS FOR SOUTHERN CALIFORNIA COAST AND SANTA BARBARA CHANNEL INCLUDING THE CHANNEL ISLANDS NATIONAL MARINE SANCTUARY...
AT 21Z...1 PM PST...A 1044 MB HIGH WAS OVER IDAHO. A 1017 MB LOW WAS 200 NM SW OF POINT CONCEPTION. LIGHT AND VARIABLE FLOW WILL PERSIST OVER THE OUTER WATERS THROUGH SAT. LIGHT TO MODERATE OFFSHORE FLOW WILL PERSIST ACROSS THE INNER WATERS INTO SAT.

$$

PZZ670-100515-
/O.ROU.KLOX.MA.F.0000.000000T0000Z-000000T0000Z/
WATERS FROM PT. PIEDRAS BLANCAS TO PT. ARGUELLO AND WESTWARD 60 NM-
300 PM PST FRI DEC 9 2005

.TONIGHT...WIND VARIABLE 10 KT OR LESS...BECOMING NE 10 KT AFTER MIDNIGHT. WIND WAVES 2 FT OR LESS. W SWELL 4 TO 6 FT AT 11 SECONDS.
.SAT...NE WIND 10 KT IN THE MORNING...BECOMING VARIABLE 10 KT OR LESS. WIND WAVES 2 FT OR LESS. W SWELL 4 TO 6 FT AT 15 SECONDS.
.SAT NIGHT...WIND VARIABLE 10 KT OR LESS. WIND WAVES 2 FT OR LESS. W SWELL 6 TO 8 FT AT 14 SECONDS.
.SUN...WIND VARIABLE 10 KT OR LESS...BECOMING S 10 KT IN THE AFTERNOON. WIND WAVES 2 FT OR LESS. W SWELL 7 TO 9 FT. SLIGHT CHANCE OF SHOWERS.
.SUN NIGHT...WIND VARIABLE 10 KT OR LESS. WIND WAVES 2 FT OR LESS. W SWELL 8 TO 10 FT.
.MON...WIND VARIABLE 10 KT OR LESS. WIND WAVES 2 FT OR LESS. W SWELL 8 TO 10 FT.
.MON NIGHT...NW WIND 10 TO 15 KT. WIND WAVES 2 FT OR LESS. W SWELL 8 TO 10 FT.
.TUE...NW WIND 10 TO 15 KT. WIND WAVES 2 FT OR LESS...BECOMING 3 FT. W SWELL 6 TO 8 FT.
.WED...NW WIND 10 TO 15 KT. WIND WAVES 3 TO 4 FT. W SWELL 6 TO 8 FT.

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PZZ673-100515-
/O.ROU.KLOX.MA.F.0000.000000T0000Z-000000T0000Z/
WATERS FROM PT. ARGUELLO TO SANTA CRUZ ISLAND CA AND WESTWARD 60 NM
INCLUDING SAN MIGUEL AND SANTA ROSA ISLANDS-
300 PM PST FRI DEC 9 2005

.TONIGHT...N WIND 10 KT EARLY...BECOMING VARIABLE 10 KT OR LESS. WIND WAVES 2 FT OR LESS. W SWELL 4 TO 6 FT AT 11 SECONDS.
.SAT...NE WIND 10 KT IN THE MORNING...BECOMING VARIABLE 10 KT OR LESS. WIND WAVES 2 FT OR LESS. W SWELL 4 TO 6 FT AT 15 SECONDS.
.SAT NIGHT...WIND VARIABLE 10 KT OR LESS. WIND WAVES 2 FT OR LESS. W SWELL 6 TO 8 FT AT 14 SECONDS.
.SUN...WIND VARIABLE 10 KT OR LESS. WIND WAVES 2 FT OR LESS. W SWELL 7 TO 9 FT. SLIGHT CHANCE OF SHOWERS.
.SUN NIGHT...WIND VARIABLE 10 KT OR LESS. WIND WAVES 2 FT OR LESS. W SWELL 8 TO 10 FT.
.MON...WIND VARIABLE 10 KT OR LESS...BECOMING NW 10 KT IN THE AFTERNOON. WIND WAVES 2 FT OR LESS. W SWELL 8 TO 10 FT.
.MON NIGHT...NW WIND 10 TO 15 KT. WIND WAVES 2 FT OR LESS. W SWELL 8 TO 10 FT.
.TUE...NW WIND 10 TO 15 KT. WIND WAVES 2 FT OR LESS...BECOMING 3 FT. W SWELL 6 TO 8 FT.
.WED...NW WIND 10 TO 15 KT. WIND WAVES 2 FT OR LESS...BECOMING 3 FT. W SWELL 6 TO 8 FT.

EXAMPLE COASTAL WATERS FORECAST (CONTINUED)

PZZ676-100515-
/O.ROU.KLOX.MA.F.0000.000000T0000Z-000000T0000Z/
OUTER WATERS FROM SANTA CRUZ ISLAND TO SAN CLEMENTE ISLAND TO 60 NM
OFFSHORE INCLUDING SAN NICOLAS ISLAND-
300 PM PST FRI DEC 9 2005

.TONIGHT...WIND VARIABLE 10 KT OR LESS. WIND WAVES 2 FT OR LESS. W SWELL 4 TO 6 FT AT 11 SECONDS.
.SAT...WIND VARIABLE 10 KT OR LESS. WIND WAVES 2 FT OR LESS. W SWELL 4 TO 6 FT AT 11 SECONDS.
.SAT NIGHT...WIND VARIABLE 10 KT OR LESS. WIND WAVES 2 FT OR LESS. W SWELL 6 TO 8 FT AT 14 SECONDS.
.SUN...WIND VARIABLE 10 KT OR LESS. WIND WAVES 2 FT OR LESS. W SWELL 7 TO 9 FT. SLIGHT CHANCE OF SHOWERS.
.SUN NIGHT...WIND VARIABLE 10 KT OR LESS. WIND WAVES 2 FT OR LESS. W SWELL 6 TO 8 FT.
.MON...WIND VARIABLE 10 KT OR LESS. WIND WAVES 2 FT OR LESS. W SWELL 6 TO 8 FT.
.MON NIGHT...NW WIND 10 TO 15 KT. WIND WAVES 2 FT OR LESS. W SWELL 6 TO 8 FT.
.TUE...NW WIND 10 TO 15 KT. WIND WAVES 2 FT OR LESS...BECOMING 3 FT. W SWELL 4 TO 6 FT.
.WED...NW WIND 10 TO 15 KT. WIND WAVES 2 FT OR LESS...BECOMING 3 FT. W SWELL 4 TO 6 FT.

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PZZ650-100515-
/O.ROU.KLOX.MA.F.0000.000000T0000Z-000000T0000Z/
EAST SANTA BARBARA CHANNEL FROM PT. CONCEPTION TO PT. MUGU INCLUDING
SANTA CRUZ AND ANACAPA ISLANDS-
300 PM PST FRI DEC 9 2005

.TONIGHT...NW WIND 10 KT EARLY...BECOMING VARIABLE 10 KT OR LESS. WIND WAVES 2 FT OR LESS. W SWELL 3 TO 5 FT AT 11 SECONDS.
.SAT...E TO NE WIND 10 TO 15 KT. LOCAL GUSTS TO 25 KT BELOW PASSES AND CANYONS IN THE MORNING. WIND WAVES 2 FT OR LESS. W SWELL 2 TO 4 FT AT 11 SECONDS.
.SAT NIGHT...WIND VARIABLE 10 KT OR LESS. WIND WAVES 2 FT OR LESS. W SWELL 3 TO 5 FT AT 14 SECONDS.
.SUN...WIND VARIABLE 10 KT OR LESS. WIND WAVES 2 FT OR LESS. W SWELL 4 TO 6 FT. SLIGHT CHANCE OF SHOWERS.
.SUN NIGHT...WIND VARIABLE 10 KT OR LESS. WIND WAVES 2 FT OR LESS. W SWELL 4 TO 6 FT.
.MON...WIND VARIABLE 10 KT OR LESS. IND WAVES 2 FT OR LESS. W SWELL 4 TO 6 FT.
.MON NIGHT...W WIND 10 KT. WIND WAVES 2 FT OR LESS. W SWELL 4 TO 6 FT.
.TUE...NW WIND 10 KT. WIND WAVES 2 FT OR LESS. W SWELL 2 TO 4 FT.
.WED...WIND NW 10 KT. WIND WAVES 2 FT OR LESS. W SWELL 2 TO 4 FT.

$$

PZZ655-100515-
/O.ROU.KLOX.MA.F.0000.000000T0000Z-000000T0000Z/
INNER WATERS FROM POINT MUGU TO SAN MATEO PT. CA INCLUDING SANTA
CATALINA AND SANTA BARBARA ISLANDS-
300 PM PST FRI DEC 9 2005

.TONIGHT...WIND VARIABLE 10 KT OR LESS. WIND WAVES 2 FT OR LESS. W SWELL 2 TO 4 FT AT 11 SECONDS.
.SAT...WIND NE 10 TO 15 KT. LOCAL GUSTS TO 25 KT BELOW PASSES AND CANYONS IN THE MORNING. WIND WAVES 2 FT OR LESS. W SWELL 2 TO 3 FT AT 11 SECONDS.
.SAT NIGHT...WIND VARIABLE 10 KT OR LESS. WIND WAVES 2 FT OR LESS. W SWELL 2 TO 4 FT AT 14 SECONDS.
.SUN...WIND VARIABLE 10 KT OR LESS. WIND WAVES 2 FT OR LESS. W SWELL 3 TO 5 FT. SLIGHT CHANCE OF SHOWERS.
.SUN NIGHT...WIND VARIABLE 10 KT OR LESS. WIND WAVES 2 FT OR LESS. W SWELL 3 TO 5 FT.
.MON...WIND VARIABLE 10 KT OR LESS. WIND WAVES 2 FT OR LESS. W SWELL 3 TO 5 FT.
.MON NIGHT...NW WIND 10 KT. WIND WAVES 2 FT OR LESS. W SWELL 3 TO 5 FT.
.TUE...W WIND 10 KT. WIND WAVES 2 FT OR LESS. W SWELL 2 FT.
.WED...WIND NW 10 KT. WIND WAVES 2 FT OR LESS. W SWELL 2 FT.

SURF ZONE FORECAST

The Surf Zone Forecast is a surf and swell forecast for Southern California beaches. The forecast includes surf height, rip current potential, water temperature, remarks such as max sets or surf trends during the day, and an outlook for the following day. The forecast is issued twice each day at 2:00 am and 2:00 pm. The forecast issued in the morning is for the same calendar day and the forecast issued in the afternoon is for the following calendar day.

NWS Los Angeles/Oxnard issues the surf forecast for Los Angeles and Ventura counties as well as for the Santa Barbara County South Coast, while NWS San Diego issues the surf forecast for Orange and San Diego counties.

Routine surf forecasts are not issued for areas north of Point Conception. However, the National Weather Service does issue high surf advisories when necessary for these areas. High surf advisories are explained in more detail later in the user's guide.

EXAMPLE SURF ZONE FORECAST (SRF, FZUS56)

SURF ZONE FORECAST
NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD CA
200 PM PST FRI DEC 9 2005

.FOR THE BEACHES OF SOUTHERN CALIFORNIA...VALID SAT DEC 10...

* THE FOLLOWING INFORMATION APPLIES WHEN FORECAST RIP CURRENT POTENTIAL IS "LOW": DUE TO HIGHLY VARIED COASTAL TOPOGRAPHY, DANGEROUS RIP CURRENTS ARE ALWAYS A POSSIBILITY ALONG THE SOUTHERN CALIFORNIA COASTS, AND SWIMMERS ARE URGED TO USE CAUTION AT ALL TIMES.

CAZ041-101000-
LOS ANGELES COUNTY COAST-
200 PM PST FRI DEC 9 2005

.SATURDAY...
SURF HEIGHT.....2-4 FEET.
RIP CURRENT POTENTIAL.....LOW*
WATER TEMPERATURE.....56-60 DEGREES.

REMARKS...NONE.

OUTLOOK FOR SUNDAY...LITTLE CHANGE.

$$

CAZ040-101000-
VENTURA COUNTY COAST-
200 PM PST FRI DEC 9 2005

.SATURDAY...
SURF HEIGHT.....2-4 FEET.
RIP CURRENT POTENTIAL.....LOW*
WATER TEMPERATURE.....56-60 DEGREES.

REMARKS...NONE.

OUTLOOK FOR SUNDAY...LITTLE CHANGE.

$$

CAZ039-101000-
SANTA BARBARA COUNTY SOUTH COAST-
200 PM PST FRI DEC 9 2005

.SATURDAY...
SURF HEIGHT.....1-2 FEET.
RIP CURRENT POTENTIAL.....LOW*
WATER TEMPERATURE.....59-69 DEGREES.

REMARKS...NONE.

OUTLOOK FOR SUNDAY...LITTLE CHANGE.

MARINE WEATHER STATEMENT

The Marine Weather Statement (MWS) for coastal waters is the complimentary product of the Special Weather Statement which covers land areas. It is issued for a variety of purposes including:

1. **to provide follow-up information on Special Marine Warnings and to cancel all or part of a warning (Special Marine Warnings are explained in detail later in the user's guide).**
2. **for isolated or local non-severe thunderstorm activity (severe thunderstorm over water would require a Special Marine Warning), also to give heads-up**
3. **for possible thunderstorm or waterspout activity within the next 12 hours.**
4. **to provide information on significant marine conditions including dense fog in high traffic areas, hazardous material spills, and extreme tides and/or tidal overflows.**
5. **to describe short duration but potentially hazardous conditions in which sustained winds or frequent gusts are up to 33 knots for 2 hours or less (winds 34 knots or greater would require a Special Marine Warning).**
6. **to alert mariners to very significant weather features expected in the 2 to 5 day forecast periods (approaching storm, possible gales etc).**

Marine weather statements can be issued at any time, as necessary. Most marine weather statements will be updated at least every 6 hours. Examples of several different types of marine weather statements follow.

EXAMPLE MARINE WEATHER STATEMENT - THUNDERSTORMS (MWS, FZUS76)

MARINE WEATHER STATEMENT
NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD CA
415 PM PST FRI FEB 11 2005

PZZ670-676-110300-
/O.NEW.KLOX.MA.S.0007.050212T0015Z-050212T0300Z/
WATERS FROM PT. PIEDRAS BLANCAS TO PT. ARGUELLO AND WESTWARD 60 NM-
WATERS FROM PT. ARGUELLO TO SANTA CRUZ ISLAND CA AND WESTWARD 60 NM
INCLUDING SAN MIGUEL AND SANTA ROSA ISLANDS-
415 PM PST FRI FEB 11 2005

...LINE OF SHOWERS AND POSSIBLE THUNDERSTORMS OFF THE CENTRAL COAST OF CALIFORNIA...

AT 400 PM...RADAR INDICATED A LINE OF SHOWERS AND POSSIBLE THUNDERSTORMS EXTENDING FROM NORTH OF MORRO BAY TO THE SOUTHWEST OVER 100 MILES. THESE SHOWERS ARE ALONG A COLD FRONT THAT WILL MOVE ONSHORE THROUGH THIS EVENING. SOUTHEAST WINDS AT 20 TO 30 KTS WILL SHIFT TO SOUTHWEST AND THEN NORTHWEST WITH THE PASSAGE OF THIS FRONT.

EXPECT GUSTY WINDS AND SHOWERS...WITH POSSIBLE THUNDERSTORMS THROUGHOUT THE EVENING HOURS. LIGHTNING AND SMALL HAIL MAY BE ASSOCIATED WITH ANY THUNDERSTORMS.

MARINERS ARE ADVISED TO SEEK SAFE HARBOR OR STAY IN PORT UNTIL THESE STORMS PASS THROUGH THE AREA LATER THIS EVENING.

EXAMPLE MARINE WEATHER STATEMENT - STORM OUTLOOK (MWS, FZUS76)

MARINE WEATHER STATEMENT
NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD CA
328 PM PST TUE JAN 24 2005

PZZ650-655-670-673-676-251200-
/O.NEW.KLOX.MA.S.0001.060125T2000Z-060127T2000Z
EAST SANTA BARBARA CHANNEL FROM PT. CONCEPTION TO PT. MUGU INCLUDING SANTA CRUZ AND ANACAPA ISLANDS-
INNER WATERS FROM POINT MUGU TO SAN MATEO PT. CA INCLUDING SANTA CATALINA ISLAND AND SANTA BARBARA ISLANDS-
WATERS FROM PT. PIEDRAS BLANCAS TO PT. ARGUELLO AND WESTWARD 60 NM-
WATERS FROM PT. ARGUELLO TO SANTA CRUZ ISLAND CA AND WESTWARD 60 NM INCLUDING SAN MIGUEL AND SANTA ROSA ISLANDS-
OUTER WATERS FROM SANTA CRUZ ISLAND TO SAN CLEMENTE ISLAND TO 60 NM OFFSHORE INCLUDING SAN NICOLAS ISLAND-
328 PM PST TUE JAN 24 2006

...STRONG WINDS AND VERY HIGH SEAS WILL LIKELY AFFECT THE COASTAL WATERS WEDNESDAY AFTERNOON THROUGH THURSDAY...

...MINOR TIDAL OVERFLOW POSSIBLE FOR LOW LYING COASTAL AREAS THROUGH FRIDAY MORNING...

A STRONG STORM SYSTEM WILL APPROACH THE CALIFORNIA COAST WEDNESDAY...AND MOVE ONSHORE WEDNESDAY NIGHT THROUGH THURSDAY. THIS STORM HAS THE POTENTIAL TO PRODUCE GALE FORCE WINDS ACROSS THE COASTAL WATERS NORTH OF POINT CONCEPTION...WITH WINDS ABOVE SMALL CRAFT ADVISORY CRITERIA LIKELY ACROSS THE REMAINDER OF THE COASTAL WATERS. VERY LARGE SEAS ARE LIKELY IN ASSOCIATION WITH THIS STORM AS WELL...AND HEAVY SURF ADVISORIES WILL VERY LIKELY BE REQUIRED ONCE AGAIN FOR WEDNESDAY NIGHT THROUGH THURSDAY.

IN ADDITION...THE FULL MOON DURING THE NEXT COUPLE OF DAYS WILL PRODUCE HIGH ASTRONOMICAL TIDES...WHICH COMBINED WITH THE LARGE SWELL WILL BE CAPABLE OF CAUSING MINOR TIDAL OVERFLOW ACROSS LOW LYING COASTAL AREAS. HIGHEST PREDICTED TIDES AT SELECTED COASTAL LOCATIONS FOR THE NEXT FEW DAYS...

DAY.....DATE	LOS ANGELES HARBOR HEIGHT.....TIME	PORT SAN LUIS WHARF HEIGHT.....TIME
TODAY...JAN 9	7.1 FEET.....807 AM	7.0 FEET.....855 AM
WED.....JAN 10	7.1 FEET.....853 AM	7.0 FEET.....941 AM
THU.....JAN 11	6.9 FEET.....941 AM	6.8 FEET.....1029 AM
FRI.....JAN 12	6.4 FEET....1031 AM	6.3 FEET.....1119 AM

STAY TUNED TO NOAA WEATHER RADIO OR YOUR FAVORITE MEDIA SOURCE FOR THE LATEST MARINE WEATHER INFORMATION.

EXAMPLE MARINE WEATHER STATEMENT - SPECIAL MARINE WARNING UPDATE (MWS, FZUS76)

MARINE WEATHER STATEMENT
NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD CA
215 AM PST WED FEB 15 2006

PZZ655-150900-
/O.NEW.KLOX.MA.S.0001.060215T0800Z-060215T0900Z/
INNER WATERS FROM POINT MUGU TO SAN MATEO PT. CA INCLUDING SANTA CATALINA ISLAND AND SANTA BARBARA ISLANDS-
215 AM PST WED FEB 15 2006

...SPECIAL MARINE WARNING REMAINS IN EFFECT FOR THE INNER WATERS FROM POINT MUGU TO SAN MATEO POINT UNTIL 315 AM...

AT 200 AM...POWERFUL WINDS CONTINUED TO BLOW AROUND A STRONG LOW PRESSURE AREA SOUTHWEST OF LOS ANGELES. SOUTHEASTERLY WINDS OF 40 TO 50 KT WITH LOCALLY STRONGER GUSTS WERE AFFECTING THE INNER COASTAL WATERS OF SOUTHERN CALIFORNIA. SAN PEDRO CHANNEL AT 130 FEET REPORTED AN EAST WIND AT 46 KT...AND CATALINA AIRPORT REPORTED A SOUTH WIND GUSTING TO 47 KT.

THESE STRONG WINDS WILL AFFECT THE INNER COASTAL WATERS AT LEAST THROUGH 3 AM TUESDAY MORNING. MARINERS ARE ADVISED TO SEEK SAFE HARBOR IMMEDIATELY.

SPECIAL MARINE WARNING

The Special Marine Warning is used for severe, short-term events of approximately two hours or less. It is issued for short duration yet sustained winds of 34 knots or greater, when severe local storms move from land to coastal waters or when severe weather develops over the coastal waters. Special Marine Warnings are often issued in Southern California during the winter when waterspouts develop in the coastal waters. Special Marine Warnings are updated using the Marine Weather Statement (MWS). Several different examples of Special Marine Warnings appear below:

EXAMPLE SPECIAL MARINE WARNING - THUNDERSTORM (SMW, WMUS1)

PZZ655-141715-
/O.NEW.KLOX.MA.W.0018.050114T1620Z-050114T1715Z/

BULLETIN - IMMEDIATE BROADCAST REQUESTED
SPECIAL MARINE WARNING
NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD CA
820 AM PST FRI JAN 14 2005

THE NATIONAL WEATHER SERVICE IN OXNARD HAS ISSUED A

* SPECIAL MARINE WARNING FOR...
  INNER WATERS FROM POINT MUGU TO SAN MATEO PT. CA INCLUDING SANTA CATALINA ISLAND...AND THE SAN PEDRO CHANNEL

* UNTIL 915 AM PST

* AT 815 AM...RADAR SHOWED AN INTENSE THUNDERSTORM 15 MILES WEST OF PALOS VERDES PENINSULA. MOVEMENT WAS TO THE NORTHEAST AT 5 KNOTS.

* THIS INTENSE STORM WILL MOVE THROUGH THE SANTA MONICA BAY DURING THE NEXT HOUR. IT WILL LIKELY BE ACCOMPANIED BY BRIEF HEAVY RAIN...GALE FORCE WINDS...DANGEROUS LIGHTNING...HAIL...AND POSSIBLY WATERSPOUTS.

MARINERS AND BOATERS SHOULD REMAIN IN HARBOR UNTIL THIS STORM PASSES. THUNDERSTORMS ACCOMPANIED BY DEADLY LIGHTNING CAN GENERATE HIGH WINDS AND WATERSPOUTS MAKING FOR LOCALLY HAZARDOUS SEAS. WATERSPOUTS CAN EASILY SWAMP BOATS...AND ALSO CREATE LOCALLY HAZARDOUS SEAS.

EXAMPLE SPECIAL MARINE WARNING - STRONG WINDS (SMW, WMUS1)

PZZ655-151115-
/O.NEW.KLOX.MA.W.0018.050215T0915Z-050215T1115Z/

BULLETIN - IMMEDIATE BROADCAST REQUESTED
SPECIAL MARINE WARNING
NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD CA
115 AM PST TUE FEB 15 2005

THE NATIONAL WEATHER SERVICE IN OXNARD HAS ISSUED A

* SPECIAL MARINE WARNING FOR...
  INNER WATERS FROM POINT MUGU TO SAN MATEO POINT

* UNTIL 315 AM PST

* AT 110 AM...A STRONG LOW PRESSURE AREA WAS CENTERED NEAR SAN NICOLAS ISLAND...OR ABOUT 100 NM SOUTHWEST OF LOS ANGELES. EAST AND SOUTHEAST WINDS AHEAD OF THIS LOW WERE GUSTING OVER 50 KNOTS AT SOME LOCATIONS ACROSS THE INNER WATERS FROM POINT MUGU TO SAN MATEO POINT. STRONG SUSTAINED WINDS OF 30 TO 40 KNOTS WITH LOCAL GUSTS OVER 50 KNOTS WILL CONTINUE THROUGH 315 AM AS THE LOW PRESSURE CENTER SLOWLY MOVES CLOSER TO THE AREA. A GALE WARNING IS ALSO IN EFFECT FOR THE INNER WATERS.

MARINERS AND BOATERS SHOULD REMAIN IN HARBOR UNTIL THE WINDS SUBSIDE. CONDITIONS ACROSS THE INNER COASTAL WATERS ARE EXTREMELY DANGEROUS AT THIS TIME. THE SPECIAL MARINE WARNING MAY NEED TO BE EXTENDED LATER TONIGHT...DEPENDING ON THE MOVEMENT OF THE SURFACE LOW PRESSURE SYSTEM DURING THE NEXT COUPLE OF HOURS. STAY TUNED TO NOAA WEATHER RADIO FOR THE LATEST WEATHER INFORMATION.

EXAMPLE SPECIAL MARINE WARNING - WATERSPOUT (SMW, WMUS1)

PZZ655-142215-
/O.NEW.KLOX.MA.W.0018.050214T2138Z-050214T2215Z/

BULLETIN - IMMEDIATE BROADCAST REQUESTED
SPECIAL MARINE WARNING
NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD CA
138 PM PST MON FEB 14 2005

THE NATIONAL WEATHER SERVICE IN OXNARD HAS ISSUED A

* SPECIAL MARINE WARNING FOR...
  EAST SANTA BARBARA CHANNEL

* UNTIL 215 PM PST

* AT 137 PM PST...WEATHER SPOTTERS REPORTED A WATERSPOUT 10 MILES SOUTHWEST OF POINT MUGU. MOVEMENT WAS ESTIMATED TO BE EAST AT 15 MPH.

MARINERS CAN EXPECT GUSTY WINDS...LOCALLY HIGH WAVES...DANGEROUS LIGHTNING AND HEAVY DOWNPOURS IN THE VICINITY OF THIS STORM. BOATERS SHOULD SEEK SAFE HARBOR IMMEDIATELY UNTIL THIS STORM PASSES.

REPORT SEVERE WEATHER TO THE NEAREST COASTAL AGENCY. THEY WILL RELAY YOUR REPORT TO THE NATIONAL WEATHER SERVICE FORECAST OFFICE IN OXNARD.

COASTAL HAZARD MESSAGES

Coastal Hazard Messages include Coastal Flood Watches, Warnings, Advisories, and Statements which provide the public with detailed information on significant coastal flood events such as widespread coastal flooding and minor events such as tidal overflow due to high astronomical tides. Coastal Hazard Messages are also issued for High Surf Advisories and above normal surf conditions. All Coastal Hazard Messages are issued with the same (CFW, FZUS68) identifier.

COASTAL HAZARD MESSAGE FOR COASTAL FLOOD WATCH

A Coastal Flood Watch is issued to inform the public and cooperating agencies that coastal flooding is possible approximately 12 to 36 hours after issuance time.

EXAMPLE COASTAL FLOOD WATCH (CFW, FZUS68)

URGENT – IMMEDIATE BROADCAST REQUESTED
COASTAL HAZARD MESSAGE
NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD CA
245 PM PST TUE JAN 24 2006

CAZ034-035-039>041-087-250500-
/O.NEW.KLOX.CF.A.0001.060126T0200Z-060128T0200Z/
SAN LUIS OBISPO COUNTY COAST-SANTA BARBARA COUNTY NORTH COAST-
SANTA BARBARA COUNTY SOUTH COAST-VENTURA COUNTY COAST-
LOS ANGELES COUNTY COAST-CATALINA ISLAND
245 PM PST TUE JAN 24 2006

...A COASTAL FLOOD WATCH IN EFFECT FROM WEDNESDAY EVENING THROUGH FRIDAY AFTERNOON FOR SAN LUIS OBISPO...SANTA BARBARA...VENTURA AND LOS ANGELES COUNTIES...

...TIDAL OVERFLOW POSSIBLE FOR LOW LYING AREAS THROUGH FRIDAY MORNING...

THE NATIONAL WEATHER SERVICE IN LOS ANGELES/OXNARD HAS ISSUED A COASTAL FLOOD WATCH...WHICH IS IN EFFECT FROM WEDNESDAY EVENING THROUGH FRIDAY AFTERNOON.

A STRONG STORM SYSTEM WILL APPROACH THE CALIFORNIA COAST WEDNESDAY....AND MOVE ONSHORE WEDNESDAY NIGHT THROUGH THURSDAY. THIS STORM HAS THE POTENTIAL TO PRODUCE COASTAL FLOODING IN LOW LYING COASTAL LOCATIONS BETWEEN POINT PIEDRAS BLANCAS AND POINT VICENTE...ESPECIALLY AROUND THE TIME OF THE MORNING HIGH TIDE. TIDES OF 6 TO 8 FEET ABOVE NORMAL ARE POSSIBLE IN COASTAL LOCATIONS.

REMEMBER...A COASTAL FLOOD WATCH MEANS THAT THERE IS POTENTIAL FOR COASTAL FLOODING TO DEVELOP... BUT THERE IS NO COASTAL FLOODING OCCURRING RIGHT NOW.

A NEARLY FULL MOON DURING THE NEXT COUPLE OF DAYS WILL PRODUCE HIGH ASTRONOMICAL TIDES...WHICH COMBINED WITH THE LARGE SWELL WILL BE CAPABLE OF CAUSING TIDAL OVERFLOW ACROSS LOW LYING COASTAL AREAS. HIGHEST PREDICTED TIDES AT SELECTED COASTAL LOCATIONS FOR THE NEXT FEW DAYS ARE...

DAY.....DATE	LOS ANGELES HARBOR HEIGHT.....TIME	PORT SAN LUIS WHARF HEIGHT.....TIME
WED....JAN 25	7.1 FEET.....853 AM	7.0 FEET.....941 AM
THU.....JAN 26	6.9 FEET.....941 AM	6.8 FEET.....1029 AM
FRI.....JAN 27	6.4 FEET.....1031 AM	6.3 FEET.....1119 AM

ALL PERSONS LIVING ALONG THE COAST SHOULD TAKE IMMEDIATE ACTION TO PROTECT THEIR PROPERTY. SECURE ALL LOOSE OBJECTS...BOARD UP WINDOWS CLOSE TO THE GROUND...AND KNOW YOUR EVACUATION ROUTES.

STAY TUNED TO NOAA WEATHER RADIO OR YOUR FAVORITE MEDIA SOURCE FOR THE LATEST INFORMATION ON THIS DEVELOPING WEATHER EVENT.

COASTAL HAZARD MESSAGE FOR COASTAL FLOOD WARNING

A Coastal Flood Warning is issued to inform the public and cooperating agencies that coastal flooding, posing a serious threat to life and property, is occurring, is imminent, or is expected within the next 24 hours.

EXAMPLE COASTAL FLOOD WARNING (CFW, FZUS68)

URGENT - IMMEDIATE BROADCAST REQUESTED
COASTAL HAZARD MESSAGE
NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD CA
830 PM PST WED JAN 25 2006

CAZ034-035-039>041-087-261030-
/O.UPG.KLOX.CF.A.0001.060126T0200Z-060128T0200Z/
/O.NEW.KLOX.CF.W.0001.060126T1400Z-060128T0200Z/
SAN LUIS OBISPO COUNTY COAST-SANTA BARBARA COUNTY NORTH COAST-
SANTA BARBARA COUNTY SOUTH COAST-VENTURA COUNTY COAST-
LOS ANGELES COUNTY COAST-CATALINA ISLAND
830 PM PST WED JAN 25 2006

...COASTAL FLOOD WARNING IN EFFECT FROM 6 AM THURSDAY TO 6 PM PST FRIDAY FOR SAN LUIS OBISPO...SANTA BARBARA...VENTURA...AND LOS ANGELES COUNTIES...

THE NATIONAL WEATHER SERVICE IN LOS ANGELES/OXNARD HAS ISSUED A COASTAL FLOOD WARNING...WHICH IS IN EFFECT FROM 6 AM THURSDAY TO 6 PM PST FRIDAY. THE COASTAL FLOOD WATCH IS NO LONGER IN EFFECT.

THE COASTAL FLOOD WARNING MEANS THAT COASTAL FLOODING IS LIKELY...ESPECIALLY NEAR THE TIMES OF THE ASTRONOMICAL HIGH TIDES. ALL PERSONS LIVING ALONG THE COAST OR WITH INTERESTS IN LOW LYING AREAS SHOULD RUSH ANY NEEDED PREPARATIONS TO COMPLETION THIS EVENING.

A MAJOR WINTER STORM OFF THE CALIFORNIA COAST HAS GENERATED VERY STRONG WINDS AND HIGH SEAS OVER THE OFFSHORE WATERS. CALIFORNIA OFFSHORE BUOY 46059...LOCATED 550 MILES NORTHWEST OF POINT CONCEPTION...HAS BEEN REPORTING SEAS OF UP TO 39 FEET DURING THE EVENING HOURS. THESE VERY LARGE SEAS ARE MOVING TOWARD THE COAST THIS EVENING...AND WILL BEGIN TO ARRIVE ON THE CENTRAL COAST NORTH OF POINT CONCEPTION LATE TONIGHT. THE LARGE SWELL WILL SPREAD INTO THE INNER WATERS SOUTH OF POINT CONCEPTION ON THURSDAY MORNING. SEAS WILL BUILD TO 20 TO 28 FEET ACROSS THE COASTAL WATERS NORTH OF POINT CONCEPTION DURING THE DAY THURSDAY. THE WESTERLY DIRECTION OF THE SWELL WILL ALLOW MUCH OF THE SWELL ENERGY TO SPREAD INTO THE INNER WATERS AS WELL...AND SEAS ARE EXPECTED TO BUILD TO 12 TO 20 FEET ON THURSDAY.

THIS LARGE SWELL WILL COMBINE WITH HIGH ASTRONOMICAL TIDES...ASSOCIATED WITH THE NEARLY FULL MOON...TO CAUSE COASTAL FLOODING ACROSS LOW LYING COASTAL AREAS. THE FLOODING WILL BE MOST SEVERE NEAR THE TIMES OF HIGHEST TIDES EACH MORNING...BUT COASTAL FLOODING WILL BE POSSIBLE AT ANY TIME THURSDAY THROUGH FRIDAY. HIGHEST PREDICTED TIDES AT SELECTED COASTAL LOCATIONS FOR THE NEXT TWO DAYS ARE...

DAY....DATE	LOS ANGELES HARBOR HEIGHT.....TIME	PORT SAN LUIS WHARF HEIGHT.....TIME
THU....JAN 26	6.9 FEET.....941 AM	6.8 FEET.....1029 AM
FRI.....JAN 27	6.4 FEET.....1031 AM	6.3 FEET.....1119 AM

THE LARGE SWELL IS EXPECTED TO BEGIN SLOWLY DIMINISHING ON FRIDAY...BUT SEAS WILL REMAIN ABOVE 20 FEET ACROSS THE OUTER COASTAL WATERS...AND ABOVE 12 FEET ACROSS THE INNER WATERS...FOR MUCH OF THE DAY.

STAY TUNED TO NOAA WEATHER RADIO OR YOUR FAVORITE MEDIA SOURCE FOR THE LATEST WEATHER INFORMATION.

COASTAL HAZARD MESSAGE (FOLLOW-UP)

A Coastal Hazard Message (follow-up) is used to keep the public and cooperating agencies follow-up information on existing coastal flood watches and/or warnings. It provides the latest information on local conditions, an overview of the threat for the entire coastline, and current tidal information. This message is also used to cancel or delete part of a coastal flood watch or warning.

EXAMPLE COASTAL HAZARD MESSAGE FOR COASTAL FLOODING (CFW, FZUS68)

COASTAL HAZARD MESSAGE
NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD CA
1130 PM PST THU JAN 26 2006

CAZ034-035-039>041-087-261330-
/O.CON.KLOX.CF.W.0001.060126T0830Z-060128T0200Z/
SAN LUIS OBISPO COUNTY COAST-SANTA BARBARA COUNTY NORTH COAST-
SANTA BARBARA COUNTY SOUTH COAST-VENTURA COUNTY COAST-
LOS ANGELES COUNTY COAST-CATALINA ISLAND
1130 PM PST THU JAN 26 2006

...A COASTAL FLOOD WARNING REMAINS IN EFFECT UNTIL 6 PM PST FRIDAY FOR SAN LUIS OBISPO...SANTA BARBARA...VENTURA AND LOS ANGELES COUNTIES...

A COASTAL FLOOD WARNING REMAINS IN EFFECT THROUGH FRIDAY FROM POINT PIEDRAS BLANCAS TO SOUTH TO POINT VICENTE. THE WARNING MEANS THAT COASTAL FLOODING IS LIKELY... ESPECIALLY NEAR THE TIMES OF ASTRONOMICAL HIGH TIDE.

A MAJOR WINTER STORM OFF THE COAST OF CENTRAL CALIFORNIA HAS CAUSED STRONG WINDS AND VERY HIGH SEAS OVER THE COASTAL WATERS. THE SEAS PEAKED DURING THE DAY ON THURSDAY...WITH HEIGHTS REACHING 20 TO 26 FEET ALONG THE CENTRAL COASTAL WATERS NORTH OF POINT CONCEPTION. AS OF 11 PM...SEAS HAVE BEGUN TO SLOWLY DIMINISH...WITH SEA HEIGHTS GENERALLY RUNNING AROUND 18 FEET...AND PERIODS OF 14 TO 17 SECONDS. MORRO BAY HARBOR REPORTED BREAKERS UP TO 25 FEET HIGH ON THURSDAY...WITH SEVERE BEACH EROSION OCCURRING. ALTHOUGH SEAS HAVE STARTED TO DECREASE...COASTAL FLOODING AND BEACH EROSION IS LIKELY AGAIN FRIDAY MORNING AROUND THE TIME OF THE ASTRONOMICAL HIGH TIDE. THE SEVERE BEACH EROSION WHICH OCCURRED ON THURSDAY WILL MAKE THE COASTAL AREAS MORE VULNERABLE TO ADDITIONAL FLOODING AND BEACH EROSION ON FRIDAY MORNING...EVEN THROUGH THE SEA HEIGHTS HAVE DECREASED SOMEWHAT.

ACROSS THE INNER WATERS SOUTH OF POINT CONCEPTION...THE IMPACT OF THE SWELL DECREASED SLIGHTLY BY LATE THURSDAY AFTERNOON...AS THE DIRECTION OF THE SWELL BECAME SLIGHTLY MORE NORTHWESTERLY. THIS PREVENTED SOME OF THE SWELL ENERGY FROM REACHING INTO THE INNER WATERS. HOWEVER...SEAS HAVE STILL BEEN RUNNING AT 10 TO 12 FEET IN THIS AREA. BEACH EROSION AND PROPERTY DAMAGE HAS BEEN REPORTED ALONG THE VENTURA COUNTY COAST NORTHWEST OF THE CITY OF VENTURA. BREAKERS OF 8 TO 12 FEET WERE COMMON ALONG MANY SOUTHERN CALIFORNIA BEACHES ON THURSDAY. ADDITIONAL COASTAL FLOODING AND BEACH EROSION IS LIKELY AROUND THE TIME OF HIGH TIDE FRIDAY MORNING.

SEAS AND SURF WILL CONTINUE TO DIMINISH ON FRIDAY...AND THE COASTAL FLOODING THREAT SHOULD LESSEN FRIDAY AFTERNOON...ONCE THE TIME OF ASTRONOMICAL HIGH TIDE HAS PASSED. HOWEVER...COASTAL RESIDENTS SHOULD REMAIN ALERT FOR LIKELY COASTAL FLOODING AND BEACH EROSION THROUGH MIDDAY FRIDAY.

HIGH SURF ADVISORY

High surf advisories are issued when widespread surf is expected to reach heights of 7 feet or greater across beaches south of Point Conception, or 10 feet or greater on beaches north of Point Conception. High surf is normally caused by large ocean swell, typically generated by North Pacific storms during the winter and early spring (October - April), and by distant Southern Hemisphere storms during the summer and early fall (May - September). Impact of the surf on particular beaches can vary greatly from one event to the next, depending on the exact direction, height and period of the swell. High surf advisories are issued when high surf is expected to occur within the next 6 to 12 hours, and are normally updated every 6 hours until the high surf has subsided. Coastal Hazard Messages are also issued for above normal surf which is forecast to be just below high surf advisory criteria.

EXAMPLE COASTAL HAZARD MESSAGE FOR A HIGH SURF ADVISORY (CFW, FZUS68)

COASTAL HAZARD MESSAGE
NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD CA
1015 PM PST THU JAN 19 2006

CAZ034-035-201400-
/O.CON.KLOX.SU.Y.0003.000000T0000Z-060120T1400Z/
SAN LUIS OBISPO COUNTY COAST-SANTA BARBARA COUNTY NORTH COAST-
1015 PM PST THU JAN 19 2006

...HIGH SURF ADVISORY REMAINS IN EFFECT UNTIL 6 AM PST FRIDAY...

A HIGH SURF ADVISORY REMAINS IN EFFECT UNTIL 6 AM PST FRIDAY.

LARGE WESTERLY SWELL OF 12 TO 15 FEET WILL CONTINUE TO AFFECT THE COASTAL WATERS OF CENTRAL CALIFORNIA THROUGH THIS EVENING BEFORE SUBSIDING LATER TONIGHT. THE LARGE SWELL WILL BRING SURF OF 11 TO 14 FEET ON WEST AND NORTHWEST FACING COASTAL AREAS...WITH LOCAL SETS TO 16 FEET. THE SURF WILL START TO DIMINISH AFTER MIDNIGHT.

TIDES WILL NOT BE VERY HIGH DURING THIS LARGE SWELL EVENT. THEREFORE...WIDESPREAD COASTAL FLOODING IS NOT LIKELY.

A HIGH SURF ADVISORY MEANS THAT HIGH SURF WILL AFFECT BEACHES IN THE ADVISORY AREA...PRODUCING RIP CURRENTS AND LOCALIZED BEACH EROSION.

$$

CAZ039>041-087-201400-
/O.CON.KLOX.CF.S.0004.000000T0000Z-060120T2000Z/
SANTA BARBARA COUNTY SOUTH COAST-VENTURA COUNTY COAST-
LOS ANGELES COUNTY COAST-CATALINA ISLAND-
1015 PM PST THU JAN 19 2006

...HIGHER THAN NORMAL SURF CAN BE EXPECTED ALONG WEST FACING BEACHES OF SOUTHERN CALIFORNIA...

ACROSS THE INNER WATERS...WEST SWELL OF 6 TO 9 FEET WILL AFFECT THE SANTA BARBARA CHANNEL...SANTA MONICA BASIN...AND THE SAN PEDRO CHANNEL THROUGH THIS EVENING...THEN SLOWLY SUBSIDE LATER TONIGHT AND FRIDAY MORNING. WEST FACING BEACHES WILL SEE HIGHER THAN NORMAL SURF...GENERALLY BETWEEN 4 AND 6 FEET...WITH LOCAL SETS AS HIGH AS 8 FT IN SOME OF THE FAVORABLE WEST FACING BEACHES. THE SURF IS EXPECTED TO DIMINISH LATER TONIGHT AND FRIDAY MORNING...BUT REMAIN GENERALLY ABOVE NORMAL UNTIL AROUND MIDDAY FRIDAY.

IT IS HAZARDOUS TO FISH OR OBSERVE WAVES FROM EXPOSED COASTAL STRUCTURES OR ROCKS DURING ABOVE NORMAL SURF CONDITIONS. LARGE WAVES CAN SUDDENLY SWEEP ACROSS PREVIOUSLY DRY AREAS.

METHODS OF RECEIVING NWS FORECASTS, STATEMENTS AND WARNINGS

NOAA Weather Radio - continuous broadcast of the latest buoy and weather observations, forecasts, statements, and warnings.

Weather Band	Frequency	Call Sign	Location
Weather 1	162.550 MHz	KIH-30	Point Arena
Weather 2	162.400 MHz	KHB-49	Mt. Pise (San Francisco)
Weather 5	162.450 MHz	WWF-64	Monterey (*marine radio*)
Weather 7	162.525 MHz	WNG-592	Hearst Castle (*marine radio*)
Weather 1	162.550 MHz	KIH-31	San Luis Obispo
Weather 3	162.475 MHz	WWF-62	Santa Barbara (*marine radio*)
Weather 2	162.400 MHz	KIH-34	Santa Barbara
Weather 1	162.550 MHz	KWO-37	Los Angeles (Mount Lukens)
Weather 7	162.525 MHz	WNG-584	Avalon (*marine radio*)
Weather 5	162.450 MHz	WWG-21	Santa Ana
Weather 2	162.400 MHz	KEC-62	San Diego
Weather 4	162.425 MHz	WNG-637	San Diego (*marine radio*)

Public Telephone Numbers - These numbers offer the latest recorded forecasts (and warnings if any are in effect) at all times. In addition, a live person can be reached for further information during the hours indicated below:

NWS Office	Number	Hours Live Person is Available
Los Angeles/Oxnard	(805) 988-6610	9am-2pm Daily
San Diego	(858) 675-8706	8am-4pm Monday – Friday
Monterey	(831) 656-1725	8am-4pm Monday - Friday

NWS FTPMAIL - NWS radiofax charts broadcast by the USCG from Point Reyes, as well as NWS marine text forecasts, are available via email. The FTPMAIL server is intended to allow Internet access for mariners and other users who do not have direct access to the World Wide Web but who are equipped with an email system. Turnaround time (time from sending email request to receiving response) is generally under one hour, however, performance may vary widely and receipt cannot be guaranteed. Instructions for using FTPMAIL may be obtained by sending an email to ftpmail@weather.noaa.gov. The subject line may be blank or any text, and the body of the message should be "help". These instructions are also on the Web at http://weather.noaa.gov/pub/fax/ftpmail.txt

METHODS OF RECEIVING NWS WEATHER INFORMATION (CONTINUED)

NWS Web Sites - These contain a wealth of weather information, including most real-time forecasts and warnings. Users should keep in mind that while using the Internet there may be outages or data delays on occasion. The NWS Marine Dissemination page listed below contains a substantial amount of useful material regarding the various methods of obtaining weather information.

NWS Los Angeles/Oxnard - http://www.weather.gov/losangeles
NWS San Diego - http://www.weather.gov/sandiego
NWS San Francisco/Monterey - http://www.weather.gov/sanfrancisco
NWS Marine Dissemination Page- http://www.nws.noaa.gov/om/marine/home.htm

NWS Radiofax Charts - Weather analysis and forecast charts are broadcast from many locations around the world. Maps are received onboard using a dedicated radiofax receiver, or a single sideband shortwave receiver connected to either an external fax recorder or a PC equipped with a radiofax interface and application software. Additional information about the radiofax program is available online at http://www.nws.noaa.gov/om/marine/radiofax.htm. For the West Coast, broadcasts (detailed in the back of this guide) are made from Point Reyes on the following schedule/frequencies (UTC time is obtained by adding 8 hours to PST, or adding 7 hours to PDT):

Broadcast Start Times (UTC)	Frequencies (kHz)
0140Z, 0655Z, 1120Z, 1400Z	4346, 8682, 12786, 17151.2
1840Z, 2320Z	8682, 12786, 17151.2, 22527

USCG VHF Broadcasts - NWS coastal marine forecasts and warnings are broadcast by the U.S. Coast Guard. These are broadcast on Channel 22A (157.1 MHz VHF FM), after an initial announcement on Channel 16 (156.8 MHz VHF FM). Typical coverage range extends about 20 nautical miles offshore, but can be greater. Selected transmitting locations and broadcast times for Southern and Central California are listed below:

Location	Broadcast Times (UTC)
Group Los Angeles/Long Beach	0200Z, 1800Z
Group San Francisco	1630Z, 1900Z, (2130Z - winter only)
Activities San Diego	Warnings only

METHODS OF RECEIVING NWS WEATHER INFORMATION (CONTINUED)

USCG MF Broadcasts - NWS offshore marine forecasts, selected coastal marine forecasts, tropical weather information, and tsunami bulletins are broadcast on 2670 kHz, following an initial announcement on 2182 kHz. Typical coverage range is 50-150 nautical miles offshore during the day, and 150-300 nautical miles offshore at night. Note that while the coastal marine forecast from NWS Monterey is included in the current broadcast program from Group San Francisco, the coastal forecast from NWS Oxnard is NOT included in the broadcast from Group Los Angeles/Long Beach. More information can be found online at:

www.nws.noaa.gov/om/marine/mfvoice.htm

Selected transmitting locations and broadcast times for Southern and Central California:

Location	Broadcast Times (UTC)
Group Los Angeles/Long Beach	0503Z, 1303Z, 2103Z
Group San Francisco	0203Z, 1403Z

NAVTEX Broadcast - Specially prepared NWS NAVTEX forecasts are broadcast via this system, which provides a method of printing out text forecasts on board a vessel. The broadcasts are made on the 518 kHz frequency. In the past this system has been found mainly on large ships, however lower cost receivers suitable for recreational boating are now available. The NAVTEX forecasts are a blend of NWS coastal and offshore forecasts, and some of the forecast detail is lost for the coastal areas. Users requiring greater forecast detail within 60 nautical miles of shore should use NOAA weather radio, FTPMAIL, or the USCG VHF or MF broadcasts to obtain this information. More details about NAVTEX are available online at:

http://www.nws.noaa.gov/om/marine/navtex.htm

Selected transmitting locations and broadcast times for Southern and Central California:

Location	Broadcast Times (UTC)
San Francisco	0000Z, 0400Z, 0800Z, 1200Z, 1600Z, 2000Z
Cambria	0045Z, 0445Z, 0845Z, 1245Z, 1645Z, 2045Z

USCG HF Broadcast - NWS offshore and high seas forecasts along with tsunami bulletins are broadcast in upper sideband mode using a synthesized voice ("Perfect Paul"). Broadcast range can vary greatly, but can reach up to several thousand miles in good reception conditions with a proper antenna. For more details on HF, look online at: http://www.nws.noaa.gov/om/marine/hfvoice.htm

METHODS OF RECEIVING NWS WEATHER INFORMATION (CONTINUED)

Selected broadcast schedules and frequencies:

Point Reyes:

Broadcast Start Times (UTC)	Frequencies (kHz - USB)
0430Z, 1030Z	4426, 8764, 13089
1630Z, 2230Z	8764, 13089, 17314

Honolulu:

Broadcast Start Times (UTC)	Frequencies (kHz - USB)
0600Z, 1200Z	6501, 8764
0005Z, 1800Z	8764, 13089

DIAL-A-BUOY - This service allows mariners to obtain the latest conditions at many buoy and CMAN stations around the country. An option is also available to hear the latest NWS marine forecast for any of the buoy or CMAN locations. To use this service, dial (228) 688-1948 from any touch tone or cell phone. Enter 1, then the 5 digit buoy number (numbers for area buoys are listed below), followed by the # key. For CMAN stations, enter numbers corresponding to the letter ID of the station (listed below). The computer voice will then read the latest observation for the station you selected. After hearing the observation, press the # key to hear the marine forecast for that location, or press 6 to go back and select another buoy or CMAN location. More information on the Dial-A-Buoy service is available online at:

http://www.ndbc.noaa.gov/dial.shtml

Buoy Number	Buoy Name/Location	Marine Forecast Zone
46059	California Offshore	----------
46014	Point Arena	PZZ455
46013	Bodega Bay	PZZ550
46026	San Francisco	PZZ550
46012	Half Moon Bay	PZZ550
46042	Monterey	PZZ555
46028	Cape San Martin	PZZ575
46011	Santa Maria (Point Sal)	PZZ670
46023	Point Arguello	PZZ670
46063	Point Conception	PZZ673
46054	W. Santa Barbara Channel	PZZ673
46069	S. Santa Rosa Island	PZZ676
46047	Tanner Bank	----------
46086	San Clemente Basin Buoy	PZZ775
46053	Mid Santa Barbara Channel	PZZ650
46025	Santa Monica Basin	PZZ655
PTAC1 (enter 78221)	Point Arena CMAN	----------
PTGC1 (enter 78421)	Point Arguello CMAN	----------

COASTAL WEATHER BUOYS AND OTHER MARINE OBSERVATIONS

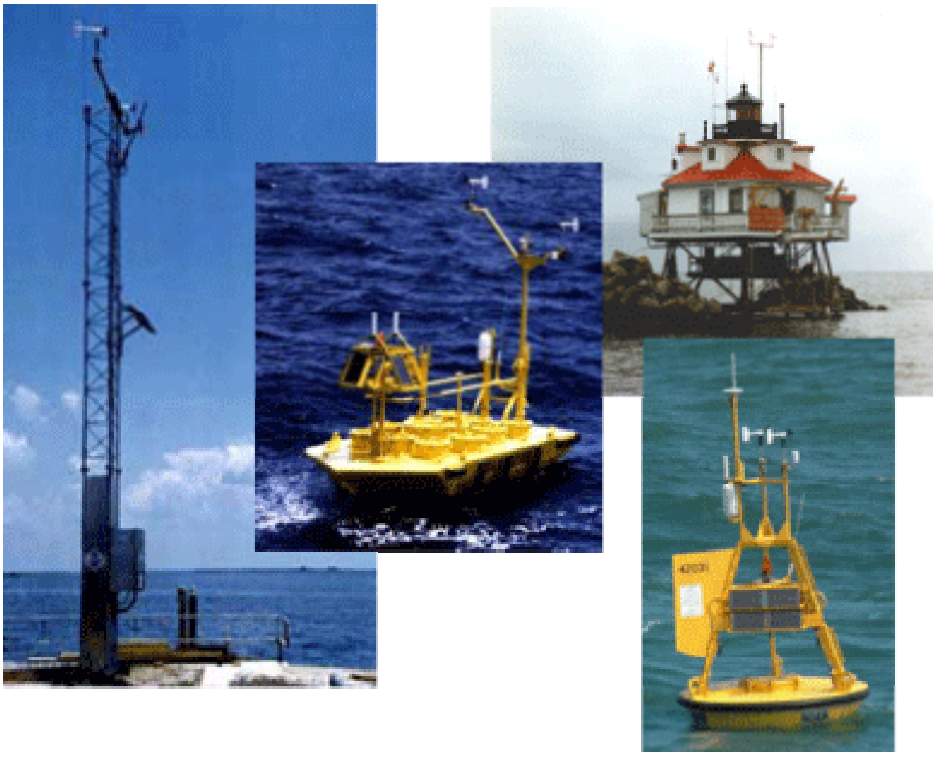
WEATHER BUOY INFORMATION

The National Oceanic and Atmospheric Administration (NOAA) National Data Buoy Center (NDBC), a part of the National Weather Service (NWS) designs, develops, operates, and maintains a network of data collecting buoys and coastal stations. NWS forecasters need frequent, high-quality marine observations to examine conditions for forecast preparation and to verify their forecasts after they are produced. Other users rely on the observations and forecasts for commercial and recreational activities. NDBC provides hourly observations from a network of about 90 buoys and 60 Coastal Marine Automated Network (C-MAN) stations to help meet these needs. All stations measure wind speed, direction, and gust; barometric pressure; and air temperature. All buoy stations, and some C-MAN stations, also measure sea surface temperature, wave height and wave period. In addition, the Scripps Research Institute has deployed buoys which provide sea surface temperature and wave data.

Point and click buoy and C-MAN observations for the southwest California coastal waters are available from the NDBC at http://www.ndbc.noaa.gov/Maps/Southwest_inset.shtml.

Alternatively, buoy observations are available from the Scripps Research Institute at http://facs.scripps.edu/surf/socal.html.

Buoy and C-MAN observations are broadcast on NOAA Weather Radio.



SOUTHERN AND CENTRAL CALIFORNIA NDBC WEATHER BUOYS

Buoy Number	Lat/Long	Location	Marine Forecast Zone
46028	35°44'13" N 121°53'19" W	Cape San Martin	PZZ575
46011	34°52'47"N 120°52'08" W	Point Sal	PZZ670
46023	34°42'50"N 120°58'00"W	Point Arguello	PZZ670
46054	34°16'08"N 120°26'54" W	W. Santa Barbara Channel	PZZ673
46063	34°16'35"N 120°39'53" W	Point Conception	PZZ673
46053	34°14'10"N 119°51'00"W	Mid Santa Barbara Channel	PZZ650
46069	33°39'00"N 120°12'00" W	South Santa Rosa Island	PZZ676
46025	33°44'42" N 119°05'02" W	Santa Monica Basin	PZZ655
46047	32°26'00"N 119°31'59" W	Tanner Bank	----------
46086	32°29'54" N 117°59'57" W	San Clemente Basin	PZZ775

ADDITIONAL MARINE OBSERVATIONS (BROADCAST WHEN AVAILABLE)

Name/Location	Data Available	Marine Forecast Zone
Point Piedras Blancas	Wind Speed/Direction	PZZ670
Diablo Canyon Buoy	Wave Ht/Period/Direction/SST	PZZ670
Harvest Buoy	Wave Ht/Period/Direction/SST	PZZ673
Goleta Point	Wave Ht/Period/Direction/SST	PZZ650
Anacapa Passage	Wave Ht/Period/Direction/SST	PZZ650
Santa Monica Bay	Wave Ht/Period/Direction/SST	PZZ655
Los Angeles Harbor	Pressure/SST	PZZ655
San Pedro Buoy	Wave Ht/Period/Direction/SST	PZZ655
Huntington Beach	Wave Ht/Period/Direction/SST	PZZ655
Dana Point	Wave Ht/Period/Direction/SST	PZZ655
Oceanside Offshore	Wave Ht/Period/Direction/SST	PZZ750
Torrey Pines Outer	Wave Ht/Period/Direction/SST	PZZ750
Scripps Pier	Wind//Wave Height/Period/SST	PZZ750
Mission Bay	Wave Ht/Period/Direction/SST	PZZ750

SST=Sea Surface Temperature

SANTA ANA WINDS

Santa Ana winds are generally defined as warm, dry winds that blow from the east or northeast (offshore). These winds occur below passes and canyons of the coastal ranges of Southern California and in the Los Angeles basin. Santa Ana winds often blow with exceptional speed in the Santa Ana Canyon (the canyon from which it derives its name). Forecasters at the NWS in Oxnard usually place speed minimums on these winds and reserve the use of "Santa Ana" for winds greater than 25 knots.

The complex topography of Southern California combined with various atmospheric conditions create numerous scenarios that may cause widespread or isolated Santa Ana events. Commonly, Santa Ana winds develop when a region of high pressure builds over the Great Basin (the high plateau east of the Sierra mountains and west of the Rocky mountains including most of Nevada and Utah). Clockwise circulation around the center of this high pressure area forces air down slope from the high plateau. The air warms as it descends toward the California coast at the rate of 5 degrees F per 1000 feet due to compressional heating. Thus, compressional heating provides the primary source of warming. The air is dry since it originated in the desert, and it dries out even more as it is heated.

Santa Ana winds commonly occur between October and February with December having the highest frequency of events. Summer events are rare. Wind speeds are typically north to east at 35 knots through and below passes and canyons with gusts to 50 knots. Stronger Santa Ana winds can have gusts greater than 60 knots over widespread areas and gusts greater than 100 knots in favored areas. Frequently, the strongest winds in the basin occur during the night and morning hours due to the absence of a sea breeze. The sea breeze which typically blows onshore daily, can moderate the Santa Ana winds during the late morning and afternoon hours.

Major Santa Ana wind associated dangers for mariners include: strong and gusty winds below passes and canyons along the coast, unusually high surf conditions on the northeast facing sides of the Channel Islands, and in extreme events, widespread high winds across the coastal waters.

SUNDOWNER WINDS

Along the Pacific coastline, 100 miles northwest of Los Angeles, beneath the ridges and canyons of the Santa Ynez Mountains, lies the city of Santa Barbara. This city and vicinity experience a down slope wind event named "Sundowner". Sundowners are independent of Santa Ana down slope winds and much smaller in scale. Sundowners received their name because the wind occurs predominantly in the late afternoon or evening hours.

The area affected by Sundowner winds is a narrow coastal plain one to five miles wide that rises precipitously to the Santa Ynez Mountain ridge line. The ridge is notched with three significant openings: (1) Nojoqui Pass (pronounced nah-ho-wee) at 925 feet, (2) Refugio Pass at 2254 feet, and (3) San Marcos Pass, directly above the city of Santa Barbara, at 2224 feet. Strong channeling of the Sundowner winds occurs in the vicinity of the three major mountain passes and near the south facing coastal canyons. There is also a fourth notch to the northeast of Santa Barbara, Romero Saddle at 3025 feet, which can occasionally contribute significantly in Sundowner wind episodes.

Sundowners, like most down slope winds, occur in various degrees of severity. Light Sundowners create irregular rises in temperature at Santa Barbara with gentle offshore breezes. Stronger Sundowners, occurring two or three times a year, result in sharp temperature rises and local gale force winds. Rarely, approximately every ten years, an "explosive" Sundowner occurs, resulting in extremely strong and hot winds along the south side of the Santa Ynez Mountains and onto the shoreline region reaching gale force or higher speeds.

The down slope and offshore mechanisms that cause Sundowner events around Santa Barbara are essentially the same as those that cause the larger scale Santa Ana winds to the south. Typically a north-south difference in atmospheric pressure with the region of high pressure located north or northwest of Santa Barbara is an early precursor of a Sundowner event. Clockwise circulation around the center of high pressure directs winds from the north across and down the mountain ranges north of Santa Barbara. The down slope winds are warmed by compression while their velocity increases as they descend through the passes and canyons and onto the coastal plain.

The hazards associated with Sundowner winds are the same as those of the Santa Ana winds. Namely, high winds below passes and canyons along the Santa Barbara County coast, with high winds becoming more widespread during extreme events.

APPENDIX A

MARINE TERMINOLOGY

Advisory: A headline indicator to emphasize that a weather event significant to small craft mariners or marine operations is occurring or is possible.

Beach Erosion: The movement of beach materials by some combination of high waves, currents and tides, or wind.

Coastal Flooding: The inundation of land areas adjacent to bodies of salt water connected to the Atlantic Ocean, Pacific Ocean, or Gulf of Mexico, caused by sea waters over and above normal tidal action. This flooding may impact the immediate oceanfront, gulfs, bays, back bays, sounds, and tidal portions of river mouths and inland tidal waterways

Coastal Flood Statement (CFW): An NWS product primarily issued to update coastal residents on the status of flooding in areas covered by a Coastal Flood Watch or Warning. The CFW is used to issue a High Surf Advisory. The CFW may also be used to address minor coastal flooding, (i.e., over and above normal high tide levels, and/or expected to result in only minor damage).

Coastal Flood Watch/Warning (CFW): An NWS product issued to update coastal residents of possible (watch) or imminent or occurring (warning) coastal flooding.

Coastal Waters Forecast (CWF): The marine forecast for areas, including bays, harbors, and sounds, from a line approximating the mean high water mark (average height of high water over a 19-year period) along the mainland or near shore islands extending out to as much as 100 NM.

Combined Seas: Generally referred to as SEAS. Used to describe the combination or interaction of wind waves and swell in which the separate components are not distinguished. This includes the case when swell is negligible or is not considered in describing sea state. Specifically, SEAS = $/(S_2+W_2)$ where S is the height of the swell and W is the height of the wind wave. When used, SEAS should be considered as being the same as the significant wave height.

Complex Gale/Storm: In the high seas and offshore forecasts, an area for which gale/storm force winds are forecast or are occurring but for which no single center is the principal generator of these winds.

Continental Shelf (CONSHELF): The zone bordering a continent and extending to a depth, usually around 100 FM (600 FT), from which there is a steep descent toward greater depth.

Continental Slope: The area of descent from the edge of the continental shelf into greater depth.

Dense (or Heavy) Fog: Per World Meteorological Organization (WMO) definition, fog restricting visibility to 1 NM or less.

MARINE TERMINOLOGY (CONTINUED)

Developing Gale/Storm: In the high seas and offshore forecasts, a headline used in the warnings
section to indicate that gale/storm force winds are not now occurring but are expected before the end of the forecast period.

Expiration time: The time noted in the communication's header at which the product is no longer in effect and should have been removed from the communication system.

Fathom: A unit of water depth equal to 6 FT.

Fetch: The across water distance over which waves are generated by winds having an approximately constant direction and speed.

Freezing Spray: An accumulation of freezing water droplets on a vessel at a rate of less than 2 centimeters (cm) per hour caused by some appropriate combination of cold water, wind, cold air temperature, and vessel movement.

Gale Warning: A warning of sustained surface winds, or frequent gusts, in the range of 34 knots (39 mph) to 47 knots (54 mph) inclusive, either predicted or occurring, and not directly associated with a tropical cyclone.

Gust: A fluctuation of the mean wind speed with variations of 10 knots or more between peaks and lulls. Gusts should usually not be included in the forecasts with wind speeds below 10 knots. Gusts occurring on a time-scale greater than 2 hours are considered frequent.

Heavy Freezing Spray: An accumulation of freezing water droplets on a vessel at a rate of 2 cm per hour or greater caused by some appropriate combination of cold water, wind, cold air temperature, and vessel movement.

High Seas Forecasts (HSF): Marine forecasts for the major oceans of the world. In this context, major gulfs or seas (e.g., the Gulf of Mexico or the Bering Sea) are included within these forecast
areas. Areas of responsibility for the U.S. are determined by international agreements under the auspices of the World Meteorological Organization (WMO).

High Surf Advisory: A forecast of high surf conditions on oceanic shores that may pose a threat to life or property. High Surf Advisories are issued using the Coastal Flood Statement (CFW) product. High surf may be characterized by observations specific to a geographical area.

Hurricane/Typhoon: A tropical cyclone in which the maximum sustained surface wind is 64 knots (74 mph) or greater.

MARINE TERMINOLOGY (CONTINUED)

Hurricane Warning: A warning for sustained surface winds of 64 knots (74 mph) or higher associated with a hurricane are expected in a specified coastal area within 24 hours or less. A hurricane or typhoon warning can remain in effect when dangerously high water or a combination of dangerously high water and exceptionally high waves continue even though winds may be less than hurricane force.

Hurricane Force Wind Warning: A warning for sustained winds, or frequent gusts, of 64 knots (75 mph) or greater, either predicted or occurring, and not directly associated with a tropical cyclone.

Issuance time: The time the forecaster transmits the forecast.

Knot: Unit of speed used in navigation, equal to 1 NM per hour or about 1.15 statute miles per hour.

Marine Layer: A moist shallow layer of air of marine origin that usually has drier warmer air above it.

Marine Observations Report (MOB): A coded marine observation of the MAROB program whereby mariners report current marine weather conditions, similar to the more in-depth Voluntary Observing Ship program, however, "MAROB" replaces the "BBXX" coding in the report. Pre-registration and training is not a prerequisite for participation.

Marine Weather Statement (MWS): A product to provide mariners with details on significant or potentially hazardous conditions not otherwise covered in existing marine warnings and forecasts.

Marine Zone: Specific, defined over-water areas contained in the various NWS marine forecasts. These are the equivalent of "zones" in the public forecast program.

Nautical Mile: Unit of distance, equal to about 1.15 statute miles (length of 1 minute of latitude).

Navigational Teleprinter Exchange (NAVTEX) Forecast: A marine forecast combining various coastal waters and offshore forecasts issued to accommodate the USCG NAVTEX communication system.

Offshore Waters : Waters from 60 nm to 250 nm.

MARINE TERMINOLOGY (CONTINUED)

Offshore Waters Forecast (OFF): A marine forecast for that portion of the oceans, gulfs, and seas beyond the coastal waters extending to a specified distance from the coastline, to a specified depth contour, or covering an area defined by specific latitude and longitude points.

Other Marine Reports (OMR): A free-text observation summary prepared by a local Weather Forecast Office to provide mariners a listing of coastal marine weather observations.

Plain Language Ship Reports (PLS): A free-text summary of Marine Report(s) (MAREP). MAREP is a program whereby mariners report current coastal marine weather conditions in the form of plain language reports to local Weather Forecast Offices. Pre-registration and training is not a prerequisite for participation.

Predominant Wind: The wind that generates (or is expected to generate) the local component of the significant sea conditions across the forecast area. This is the wind included in all marine forecast products and is defined as a 10-meter wind.

Primary control tide station: A tide station where continuous observations have been made for a minimum of 19 years. Its purpose is to provide data for computing accepted values essential to tide predictions and for determining tidal datums for coastal and marine boundaries. The data series from primary control tide stations serves as a primary control for the reduction of tidal datum for subordinate tide stations with a shorter period of record. The 19 year period is the official tidal epoch for calculating tidal datums.

Rapidly Intensifying: Any maritime cyclone whose central pressure is dropping, or is expected to drop, at a rate of 1 MB per hour for 24 hours.

Rip Currents: A relatively small-scale surf-zone current moving away from the beach. Rip currents form as waves disperse along the beach causing water to become trapped between the beach and a sandbar or other underwater feature. The water converges into a narrow, river-like channel moving away from the shore at high speed.

Seas: See Combined Seas.

Severe Local Storm Watch: An alert issued for the contiguous U.S. and its adjacent waters of the potential for severe thunderstorms or tornadoes.

Significant Wave Height: The average height (trough to crest) of the one-third highest waves. An experienced observer will most frequently report heights equivalent to the average of the highest one-third of all waves observed.

Small Craft Advisory (SCA): An advisory issued by coastal and marine Weather Forecast Offices (WFO) for areas included in the Coastal Waters Forecasts. Thresholds governing the issuance of small craft advisories are specific to geographic areas. For the west coast, SCA consists of sustained winds of 21 to 33 knots. A Small Craft Advisory for Hazardous Seas (SCAHS) is issued for seas 10 feet or greater.

MARINE TERMINOLOGY (CONTINUED)

Special Marine Warning (SMW): A warning of potentially hazardous weather conditions usually of short duration (up to 2 hours) producing sustained marine thunderstorm winds or associated gusts of 34 knots or greater; and/or hail 3/4 inch or more in diameter; and/or waterspouts affecting areas included in a Coastal Waters Forecast.

Storm Surge: An abnormal rise in sea level accompanying a hurricane or other intense storm, whose height is the difference between the observed level of the sea surface and the level that would have occurred in the absence of the cyclone. Storm surge is usually estimated by subtracting the normal or astronomic tide from the observed storm tide.

Storm Tide: The actual level of sea water resulting from the astronomic tide combined with the storm surge. Most NWS flood statements, watches, or warnings quantifying above-normal tides will report the Storm Tide.

Storm Warning: A warning of sustained surface winds, or frequent gusts, in the range of 48 knots (55 mph) to 63 knots (73 mph) inclusive, either predicted or occurring, and not directly associated with a tropical cyclone.

Sustained Wind: The wind speed obtained in the U.S. by averaging observed values over a period of at least 1 minute.

Subtropical Cyclones: A non-frontal low pressure system having characteristics of both tropical and extratropical cyclones.

1. The most common type is an upper-level cold low with circulation extending to the surface layer and maximum sustained winds generally occurring at a radius of about 100 miles or more from the center. In comparison to tropical cyclones, such systems have a relatively broad zone of maximum winds that is located farther from the center, and typically have a less symmetric wind field and distribution of convection.

2. A second type of subtropical cyclone is a mesoscale low originating in or near a frontolyzing zone of horizontal wind shear, with radius of maximum sustained winds generally less than 30 miles . The entire circulation may initially have a diameter of less than 100 miles. These generally short-lived systems may be either cold core or warm core.

Subtropical Depression: A subtropical cyclone in which the maximum 1-minute sustained surface wind is 33 knots (38 mph) or less.

Subtropical Storm: A subtropical cyclone in which the maximum 1-minute sustained surface wind is 34 knots (39 mph) or more.

MARINE TERMINOLOGY (CONTINUED)

Super Typhoon: Typhoon having maximum sustained winds of 130 knots (150 mph) or greater.

Surf Zone Forecast (SRF): A routine or event-driven forecast issued for the very narrow area of water between the high tide level on the beach and the seaward side of breaking waves.

Swell: Wind-generated waves that have traveled out of their generating area. Swell characteristically exhibits smoother, more regular and uniform crests and a longer period than wind waves.

Tidal cycle: The periodic changes in the range of tides caused primarily by varying relations among the Earth, Sun, and moon. Important terms include: (a) Apogee-The farthest distance between the moon and Earth (or Earth and Sun), (b) Perigee-The closest distance between the moon and Earth (or Earth and Sun), and (c) Syzygy-The instance (new moon or full moon) when the Earth, moon, and Sun are all in a straight line. For (b) and (c) the range of tides are greater than average.

Tidal Piling: Abnormally high water levels from successive incoming tides that do not completely drain because of strong winds or waves persisting through successive tide cycles.

Tropical Cyclone: A warm-core, non-frontal synoptic-scale cyclone, originating over tropical or subtropical waters with organized deep convection and a closed surface wind circulation about a well-defined center.

Tropical Depression: A tropical cyclone in which the maximum sustained surface wind is 33 knots (38 mph) or less.

Tropical Disturbance: A discrete tropical weather system of apparently organized convection (generally 100 to 300 miles in diameter), originating in the tropics or subtropics, having a nonfrontal migratory character and maintaining its identity for 24 hours or more. It may or may not be associated with a detectable perturbation of the wind field.

Tropical Storm: A tropical cyclone in which the maximum sustained surface wind ranges from 34 to 63 knots (39 to 73 mph) inclusive.

Tropical Storm Warning: A warning for sustained surface winds, associated with a tropical cyclone, within the range of 34 to 63 knots (39 to 73 mph), expected in a specified coastal area within 24 hours.

Tropical Wave (formerly known as inverted trough): A trough or cyclonic curvature maximum in the trade wind easterlies. The wave may reach maximum amplitude in the lower middle troposphere or may be the reflection of an upper tropospheric cold low or an equatorward extension of a mid-latitude trough.

MARINE TERMINOLOGY (CONTINUED)

Tsunami: Seismic sea wave caused by an earthquake, undersea landslide or volcanic eruption. Typically arrives onshore as a series of surges.

Universal Time Coordinated (UTC): The standard international time reference based on the time at 0^{o} longitude (Greenwich Meridian).

Valid Time: That period of time during which a forecast, until it is updated or superceded by a new forecast issuance, is in effect.

Visibility: A measure of the opacity of the atmosphere. The prevailing visibility is the greatest distance that can be seen throughout at least half the horizon circle, not necessarily continuous. Visibility reported or forecast in NWS marine products should be in nautical miles.

Warning Area: The geographic area for which a specific NWS office is responsible for warning and forecast responsibility.

Warning: A headline indicator to emphasize that a weather event hazardous to all mariners or marine operations is occurring or expected to occur.

Waterspout: A rotating column of air over water whose circulation extends to the surface.

Wave Period: Time, in seconds, between the passage of consecutive wave crests past a fixed point.

Wave Spectrum: The distribution of wave energy with respect to wave frequency or period. Wave spectra assist in differentiating between wind waves and swell.

Wave Steepness: The ratio of wave height to wavelength and is an indicator of wave stability. When wave steepness exceeds a 1/7 ratio; the wave typically becomes unstable and begins to break.

Wind Radii: Found in the tropical forecast advisory/products, wind radii is the largest radii of that wind speed found in that quadrant. Quadrants are defined as NE (0-90), SE (90-180), SW (180-270), and NW (270-0). As an example, given maximum 34 knot radii to 150 NM at 0 degrees, 90 at 120 degrees, and 40 NM at 260 degrees, the following line would be carried in the forecast/advisory: 150NE 90SE 40SW 150NW.

Wind Waves: May be referred to as WAVES. Waves generated from the action of wind on the local water surface.

APPENDIX B

BEAUFORT SCALE

Number	Description	Wind (kts)	Sea State
0	calm	0	Sea like a mirror.
1	light air	1-3	Ripple with the appearance of scales are formed, but without foam crests.
2	light breeze	4-6	Small wavelets, still short, but more pronounced. Crests have a glassy appearance and do not break.
3	gentle breeze	7-10	Large wavelets. Crests begin to break. Foam of glassy appearance. Perhaps scattered whitecaps.
4	moderate breeze	11-16	Small waves, becoming larger; fairly frequent whitecaps.
5	fresh breeze	17-21	Moderate waves, taking a more pronounced long form; many whitecaps are formed. Chance of some spray.
6	strong breeze	22-27	Large waves begin to form; whitecaps are more extensive everywhere. Probably some spray.
7	near gale	28-33	Sea heaps up and white foam from breaking waves begins to be blown in streaks along the direction of the wind.
8	gale	34-40	Moderately high waves of greater length; edges of crests begin to break into spindrift. The foam is blown in well-marked streaks along the direction of the wind.
9	severe gale	41-47	High waves. Dense streaks of foam along the direction of the wind. Crests of waves begin to topple, tumble and roll over. Spray may affect visibility.
10	storm	48-55	Very high waves with long overhanging crests. The resulting foam, in great patches, is blown in dense white streaks along the direction of the wind. On the whole the surface of the sea takes on a white appearance. The 'tumbling' of the sea becomes heavy and shock-like. Visibility affected.
11	violent storm	55-63	Exceptionally high waves (small and medium-size ships might be for a time lost to view behind the waves). The sea is completely covered with long white patches of foam lying along the direction of the wind. Everywhere the edges of the wave crests are blown into froth. Visibility affected.
12	hurricane	64+	The air is filled with foam and spray. Sea completely white with driving spray; visibility very seriously affected.

APPENDIX C

RADIOFACSIMILE SCHEDULE - USCG POINT REYES CA - UPDATED November 2005

Time	Map Area	Contents of Transmission / Chart
0140Z		Test Pattern
0143Z	6	NE Pacific GOES Visible Satellite Image 21Z (23N-60N, East of 150W)
0154Z	5	Pacific GOES IR Satellite Image 00Z (05N-55N, East of 180W)
0205Z	4	Tropical Sea State Analysis 00Z (20S-30N, East of 145W)
0215Z	4	Tropical 24hr Wind/Wave Forecast (20S-30N, East of 145W)
0225Z	4	Tropical 48hr Wind/Wave Forecast (20S-30N, East of 145W)
0235Z	4	Tropical 72hr Wind/Wave Forecast (20S-30N, East of 145W)
0245Z	1	500mb Analysis 00Z (20N-70N, 115W-135E)
0255Z	1	Sea State Analysis 00Z (20N-70N, 115W-135E)
0305Z	2	Preliminary Surface Analysis 00Z (Part 1 NE Pac) (20N-70N, 115W-175W)
0318Z	3	Preliminary Surface Analysis 00Z (Part 2 NW Pac) (20N-70N, 175W-135E)
0331Z	2	Final Surface Analysis 00Z (Part 1 NE Pac) (20N-70N, 115W-175W)
0344Z	3	Final Surface Analysis 00Z (Part 2 NW Pac) (20N-70N, 175W-135E)
0357Z	10	Tropical Cyclone Danger Area 03Z [Note: Replaced by High Wind/Wave Warning Area when not in hurricane season] (0N-40N, 80W-180W)
0408Z	4	Tropical Surface Analysis 00Z (20S-30N, East of 145W)
0655Z		Test Pattern
0657Z	1	2033Z Rebroadcast (96hr 500mb Forecast) (20N-70N, 115W-135E)
0707Z	1	2043Z Rebroadcast (96hr Surface Forecast) (20N-70N, 115W-135E)
0717Z	1	2053Z Rebroadcast (96hr Wind/Wave Forecast) (20N-70N, 115W-135E)
0727Z	1	2103Z Rebroadcast (96hr Wave Period/Swell Direction Fcst) (20N-70N, 115W-135E)
0737Z	7	Tropical GOES IR Satellite Image 06Z (05N-32N, East of 130W)
0748Z	8	Sea State Analysis 06Z (25N-60N, East of 155W)
0758Z	1	24hr 500mb Forecast (20N-70N, 115W-135E)
0808Z	8	24hr Surface Forecast (25N-60N, East of 155W)

RADIOFACSIMILE SCHEDULE - USCG POINT REYES CA – CONTINUED

Time	Map Area	Contents of Transmission / Chart
0818Z	8	24hr Wind/Wave Forecast (25N-60N, East of 155W)
0828Z	1	48hr 500mb Forecast (20N-70N, 115W-135E)
0838Z	1	48hr Surface Forecast (20N-70N, 115W-135E)
0848Z	1	48hr Wind/Wave Forecast (20N-70N, 115W-135E)
0858Z	1	48hr Wave Period/Swell Direction Forecast (20N-70N, 115W-135E)
0908Z	5	Pacific GOES IR Satellite Image 06z (05N-55N, East of 180W)
0919Z	2	Surface Analysis 06Z (Part 1 NE Pac) (20N-70N, 115W-175W)
0932Z	3	Surface Analysis 06Z (Part 2 NW Pac) (20N-70N, 175W-135E)
0945Z	4	Tropical Surface Analysis 06Z (20S-30N, East of 145W)
0959Z	4	Tropical 24hr Wind/Wave Forecast (20S-30N, East of 145W)
1009Z	10	Tropical Cyclone Danger Area 09Z [Note: Replaced by High Wind/Wave Warning Area when not in hurricane season] (0N-40N, 80W-180W)
1120Z		Test Pattern
1124Z		Broadcast Schedule (Part 1)
1135Z		Broadcast Schedule (Part 2)
1146Z		Request for Comments
1157Z		Product Notice Bulletin
1208Z	4	Tropical 48hr Wind/Wave Forecast (20S-30N, East of 145W)
1218Z	4	Tropical 72hr Wind/Wave Forecast (20S-30N, East of 145W)
1400Z		Test Pattern
1403Z	6	NE Pacific GOES IR Satellite Image 12Z (23N-60N, East of 150W)
1414Z	5	Pacific GOES IR Satellite Image 12Z (05N-55N, East of 180W)
1425Z	4	Tropical Sea State Analysis 12Z (20S-30N, East of 145W)
1435Z	4	Tropical 24hr Wind/Wave Forecast (20S-30N, East of 145W)
1445Z	1	500mb Analysis 12Z (20N-70N, 115W-135E)

RADIOFACSIMILE SCHEDULE - USCG POINT REYES CA – CONTINUED

Time	Map Area	Contents of Transmission / Chart
1455Z	8	Sea State Analysis 12Z (25N-60N, East of 155W)
1505Z	2	Preliminary Surface Analysis 12Z (Part 1 NE Pac) (20N-70N, 115W-175W)
1518Z	3	Preliminary Surface Analysis 12Z (Part 2 NW Pac) (20N-70N, 175W-135E)
1531Z	2	Final Surface Analysis 12Z (Part 1 NE Pac) (20N-70N, 115W-175W)
1544Z	3	Final Surface Analysis 12Z (Part 2 NW Pac) (20N-70N, 175W-135E)
1557Z	10	Tropical Cyclone Danger Area 15Z [Note: Replaced by High Wind/Wave Warning Area when not in hurricane season] (0N-40N, 80W-180W)
1608Z	4	Tropical Surface Analysis 12Z (20S-30N, East of 145W)
1840Z		Test Pattern
1842Z	9	Sea Surface Temperature Analysis – latest version (40N-53N, East of 136W)
1852Z	6	Sea Surface Temperature Analysis – latest version (23N-60N, East of 150W)
1902Z	7	Tropical GOES IR Satellite Image 18Z (05N-32N, East of 130W)
1913Z	8	Sea State Analysis 18Z (25N-60N, East of 155W)
1923Z	1	24hr 500mb Forecast (20N-70N, 115W-135E)
1933Z	8	24hr Surface Forecast (25N-60N, East of 155W)
1943Z	8	24hr Wind/Wave Forecast (25N-60N, East of 155W)
1953Z	1	48hr 500mb Forecast (20N-70N, 115W-135E)
2003Z	1	48hr Surface Forecast (20N-70N, 115W-135E)
2013Z	1	48hr Wind/Wave Forecast (20N-70N, 115W-135E)
2023Z	1	48hr Wave Period/Swell Direction Forecast (20N-70N, 115W-135E)
2033Z	1	96hr 500mb Forecast (20N-70N, 115W-135E)
2043Z	1	96hr Surface Forecast (20N-70N, 115W-135E)
2053Z	1	96hr Wind/Wave Forecast (20N-70N, 115W-135E)
2103Z	1	96hr Wave Period/Swell Direction Forecast (20N-70N, 115W-135E)

RADIOFACSIMILE SCHEDULE-USCG POINT REYES CA-CONTINUED

Time	Map Area	Contents of Transmission / Chart
2113Z	5	Pacific GOES IR Satellite Image 18z (05N-55N, East of 180W)
2124Z	2	Surface Analysis 18Z (Part 1 NE Pac) (20N-70N, 115W-175W)
2137Z	3	Surface Analysis 18Z (Part 2 NW Pac) (20N-70N, 175W-135E)
2150Z	4	Tropical Surface Analysis 18Z (20S-30N, East of 145W)
2204Z	4	Tropical 24hr Wind/Wave Forecast (20S-30N, East of 145W)
2214Z	10	Tropical Cyclone Danger Area 21Z [Note: Replaced by High Wind/Wave Warning Area when not in hurricane season] (0N-40N, 80W-180W)
2320Z		Test Pattern
2324Z		Broadcast Schedule (Part 1)
2335Z		Broadcast Schedule (Part 2)

Area Definitions:

1=20N-70N, 115W-135E

2=20N-70N, 115W-175W

3=20N-70N, 175W-135E

4=20S-30N, East of 145W

5=05N-55N, East of 180W

6=23N-60N, East of 150W

7=05N-32N, East of 130W

8=25N-60N, East of 155W

9=40N-53N, East of 136W

10=0N-40N, 80W-180W

Contractions: VT=VALID TIME, WV=Wave, Bul=Bulletin, Hr=Hour, Prelim=Preliminary

Assigned Frequencies (KHZ):

4346 (night)
8682 (continuous)
12786 (continuous)
17151.2 (continuous)
22527 (day)

For Carrier Frequency Subtract 1.9 kHz

NOTE: This chart based on update as of November 8, 2005. Check latest updates for Pt. Reyes radiofacsimile schedule at:

http://weather.noaa.gov/pub/fax/hfreyes.txt

ABOUT THE MARINE USER'S GUIDE

This Marine User's Guide was produced by the staff of the Los Angeles/Oxnard NWS Weather Forecast Office. This February 2006 version is the eighth edition of the guide.

To offer comments on the Marine User's Guide, or suggestions for future editions of the guide, you may contact:

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